

REMARKS

First Applicant thanks the Examiner for discussing this case with the undersigned on September 12, 2007. a Statement of Substance of Interview is enclosed herewith.

As a preliminary matter, the specification is objected to based on the reasons set forth on page 2 of the Office Action. Applicant amends the specification, as indicated herein, and Applicant believes that the Examiner's objection to the specification is obviated.

Further, as a preliminary matter, claim 1 is objected to based on the reasons set forth on page 2 of the Office Action. Applicant amends claim 1, as indicated herein, and believes that the Examiner's objection to claim 1 is obviated.

Claims 1-6 are all the claims pending in the present application. Claims 1-6 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Claim 1 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Baker et al. (U.S. Patent No. 3,472,331) in view of Iizuka et al. (U.S. Patent No. 5,224,563). Claims 2-6 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Baker in view of Iizuka and Nelson (U.S. Patent No. 3,468,389).

§112, second paragraph, Rejections - Claims 1-6

Applicant believes that the Examiner's rejections of claims 1-6 under 35 U.S.C. § 112, second paragraph are obviated.

Further, Applicant submits that the steering direction can be, for example, the direction in which the car is being steered.

Yet further, the Examiner states that it is not clear what is meant by a "direct-moving guide." In response, Applicant submits that the specification recites that a direct-moving guide

can be, for example, an element that limits movement in a particular direction. *See, e.g., page 7, first full paragraph of specification.*

§103(a) Rejections (Baker/Iizuka) - Claim 1

Claim 1 is rejected based on the reason set forth on pages 3-4 of the present Office Action. Applicant traverses these rejections at least based on the following reasons.

Brief descriptions of Baker and Iizuka are as follows.

Baker is directed to an invention that is intended for use in the environment of a front steering drive axle assembly having a driver axle rotatably supported in an axle housing and a driven axle rotatably supported in a wheel hub in outgoing and spaced relation to said driver axle and in axial alignment therewith. A Cardan-type universal joint connects the axles together while improved pivot means is provided for mounting the drive axle for horizontal movement with respect to the drive axle. The pivot means comprises a yoke arm arrangement which ensures substantially equal loading to both the upper and lower yoke and bracket arms and a resilient deformable dampening and bearing means disposed between the king pin bearings and the yoke arms to suppress vibration and provide anti-shimmy characteristics to the steering drive axle assembly. *See Abstract of Baker.*

Iizuka is directed to an energy regenerating mechanism of an automobile, particularly to that adapted for an electric car. The energy regenerating mechanism is characterized in that a plurality of generators are provided so that the kinetic energy generated when the engine idles and the automobile continues running is converted into electric energy. *See Abstract of Iizuka.*

With respect to independent claim 1, Applicant submits that the applied references, either alone or in combination, do not disclose or suggest at least, "a first knuckle which is connected to a non-rotary side of the direct drive motor and locked in a steering direction," and "a second knuckle which is connected to a steering rod and to the first knuckle in such a manner that it can

turn on a king pin axis in the steering direction and is fitted with a brake unit and the wheel,"
(emphasis added) as recited in claim 1.

With respect to the first limitation quoted above, the Examiner acknowledges that Baker fails to teach a drive source as comprising a motor, however the Examiner applies Iizuka to allegedly satisfy this particular deficiency. In response, Applicant submits that even if, *arguendo*, Iizuka discloses a motor for a wheel, there is no teaching or suggestion in either of the applied references of how such a motor would be incorporated into the wheel shown in the illustration of Baker. The Examiner appears to have picked and chosen different components of two different references and alleged that they are combinable without further support or explanation. The illustration of Baker shows wheel related components within the wheel that do not appear to leave room for the inclusion of a motor, and nowhere do either of the references disclose how a motor from Iizuka would be incorporated into the wheel related components of Baker. Therefore, absent any teaching, suggestion or motivation with respect to such a combination, Applicant submits that the above quoted feature of claim 1 is clearly not satisfied by the applied references, either alone or in combination.

With respect to the second feature quoted above, even though the above-quoted feature is not satisfied by the applied references, the Examiner simply states that Baker teaches an arrangement for a steerable wheel and that it is very well known in the art to connect a steering rod to a pivoting wheel support to allow the wheel to be steered. In response, Applicant submits that even if, *arguendo*, the above statement of the Examiner is true, the Examiner has not identified a steel rod in either of the applied references and explained how any such steel rod would be connected to a second knuckle, as recited in claim 1.

Further, Applicant submits that the wheel system according to claim 1 comprises “a first knuckle which is connected to a non-rotary side of the direct drive motor” and as a result, the motor cannot be involved in turning on a king pin axis at the time of steering. As long as the motor does not turn about that axis, the moment of inertia of the motor cannot participate in causing a torque which impedes a steering torque applied to the steering shaft. Thus, the impeding torque, which must be overcome by application of steering torque at the time of steering, can be reduced by the non-participating amount caused by moment of inertia of the motor. Thus, arrangement of the non-rotary side of the motor connected to the first knuckle can produce advantageous effects of “reducing the steering torque” to be applied to the steering shaft.

Without being motivated to “reduce a moment of inertia on a steering shaft”, it is hardly possible to “connect a non-rotary side of a motor the knuckle”.

Therefore, since the above quoted features are not satisfied by the applied references, either alone or in combination, Applicant submits independent claim 1 is patentably distinguishable over the applied references.

§103(a) Rejections (Baker / Iizuka / Nelson) - Claims 2-6

Applicant submits that dependent claims 2-6 are patentable at least by virtue of their indirect or direct dependencies from independent claim 1. Nelson does not make up for the deficiencies of Baker and Iizuka.

Further, with respect to dependent claim 4, Applicant submits that the applied references do not disclose or suggest at least, “wherein the non-rotary side of the motor is supported by direct-moving guides and a buffer member in the horizontal direction of a vehicle in addition to the vertical direction,” as recited in claim 4. The Examiner appears to be utilizing impermissible

hindsight reasoning in determining that the above-quoted feature of claim 4 is satisfied since nowhere does Nelson disclose the direction in which the motor is supported.

Further, with respect to dependent claim 5, Applicant submits that the applied references, either alone or in combination, do not disclose or suggest at least, “wherein the output shaft of the motor and a wheel support hub mounted to the second knuckle are interconnected by constant velocity joints,” as recited in claim 5. The Examiner does not discuss this claim in any detail and does not identify where an output shaft of a motor and a wheel support hub would be mounted to a second knuckle, nor does the Examiner discuss the output shaft of the motor and the wheel support hub being interconnected by constant velocity joints. The Examiner does not identify constant velocity joints in any of the applied references.

Yet further, with respect to claim 6, Applicant submits that the Examiner does not even address the feature, “wherein the rotary portion of the motor and the wheel are interconnected by a flexible coupling having at least two direct-moving guides connected to each other in such a manner that their moving directions cross each other in the axial direction of the motor and a constant velocity joint-like coupling which has the center of its movement on a king pin axis and turns in the steering direction,” as recited in claim 6, under the prior art rejection section of the Office Action. Therefore, Applicant submits that this claim is patentably distinguishable over the applied references.

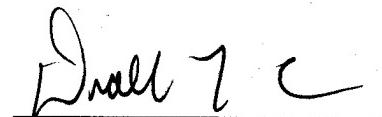
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
Application No.: 10/530,180

Attorney Docket No.: Q86875

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Diallo T. Crenshaw
Registration No. 52,778

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: October 18, 2007